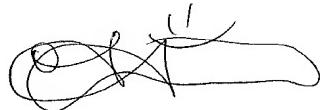


DECLARATION

I, the undersigned, Yoko OISHI, located at 2nd Floor, Kyohan Building, 2-7, Kandanishiki-cho, Chiyoda-ku, Tokyo 101-0054, JAPAN, do solemnly and sincerely declare that I fully understand the Japanese Language and the English Language and that the attached translation from the Japanese Language to the English Language of Japanese Patent Application No. 2000-299841 filed on September 29, 2000, is a true, correct and good-faith translation to the best of my knowledge and belief.

Dated this 7th day of June, 2011

A handwritten signature in black ink, appearing to read "Yoko Oishi".

Yoko OISHI

JAPAN PATENT OFFICE

This is to certify that the annexed is a true copy of the following application as filed with this Office.

Date of Application: September 29, 2000
Application Number: Application for Patent
2000-299841
Applicant: NEC Miyagi, Co., Ltd.

[Name of the Document]	PATENT APPLICATION
[Reference Number]	02500744
[Filling Date]	September 29, 2000
[Addressee]	Commissioner, Patent Office
[International Patent Classification]	G06F 17/60
[Inventor]	
[Address or Residence]	2 Aza Raijin, Yoshioka, Taiwa-cho, Kurokawa-gun, Miyagi, c/o NEC Miyagi, Co., Ltd.
[Name]	Mikihiro Gau
[Inventor]	
[Address or Residence]	2 Aza Raijin, Yoshioka, Taiwa-cho, Kurokawa-gun, Miyagi, c/o NEC Miyagi, Co., Ltd.
[Name]	Mitsuhiko Osanai
[Inventor]	
[Address or Residence]	2 Aza Raijin, Yoshioka, Taiwa-cho, Kurokawa-gun, Miyagi, c/o NEC Miyagi, Co., Ltd.
[Name]	Takashi Ando
[Inventor]	
[Address or Residence]	2 Aza Raijin, Yoshioka, Taiwa-cho, Kurokawa-gun, Miyagi, c/o NEC Miyagi, Co., Ltd.
[Name]	Hidenobu Chiba
[Inventor]	
[Address or Residence]	2 Aza Raijin, Yoshioka, Taiwa-cho, Kurokawa-gun, Miyagi, c/o NEC Miyagi, Co., Ltd.

[Name] Hideaki Kadowaki
[Applicant]
[Identification Number] 000161253
[Name or Title] NEC Miyagi Co., Ltd.
[Agent]
[Identification Number] 100080816
[Patent Attorney]
[Name or Title] Asamichi KATO
[Phone Number] 045-476-1131
[Indication of the Official Fee]
[Prepayment Register Number] 030362
[Amount of Payment] 21,000 Japanese Yen
[List of Items Submitted]
[Name of Item] Specification 1
[Name of Item] Drawings 1
[Name of Item] Abstract 1
[General Power of Attorney Number] 0012066
[Necessity of Proof] No

[Name of the Document] Specification

[Title of the Invention] Agile information system establishing method and system

[Claims]

[Claim 1]

An information processing system comprising a storage unit and a data processing unit and managing a business process, including:

a means for registering information defining the processing contents and procedures of said business process in said storage unit; and

a means for controlling execution of said business process with reference to the registered information in said storage unit, wherein change in said business process can be handled by changing information registered in said storage means.

[Claim 2]

The information processing system according to Claim 1, wherein:

information regarding said business process is divided into demand information regarding request/instruction from a request source and supply information regarding execution and results report information of said demand, said demand information and supply information being expressed by a combination of 5W1H format element information consisting of the 5Ws, Who/Whom, When, Where, What, and How;

the information processing system further comprises a means for registering demand information consisting of 5W1H format element information corresponding to a request from a request source in a demand table of a 5W1H format database of said storage unit so as to issue a request/instruction; and

the information processing system further comprises a means for registering supply information consisting of 5W1H format element information comprising the results report of said demand in a supply table of a 5W1H format database of said storage unit as a report wherein a business corresponding to said demand is executed and completed.

[Claim 3]

An information processing system comprising a storage unit and a data

processing unit and executing a business process, wherein:

the information defining said business process is divided into demand information regarding request/instruction from a request source and supply information regarding execution and results report information of said demand, said demand information and supply information being expressed by a combination of 5W1H format element information consisting of the 5Ws, Who/Whom, When, Where, and What, and How;

the information processing system further comprises a means for registering said demand information consisting of 5W1H format element information that corresponds to said request/instruction in a 5W1H format database of said storage unit upon issue of said request/instruction; and

a means for registering said supply information consisting of 5W1H format element information that is an results report of said demand in a 5W1H format database of said storage unit as a report that a business corresponding to said demand is executed and the business is completed.

[Claim 4]

The information processing system according to Claim 3, comprising a means for adding attribute information to said demand information and supply information consisting of said 5W1H format element information and registering it in said storage unit.

[Claim 5]

The information processing system according to Claim 3, wherein said demand information and supply information consisting of 5W1H format element information are associated in a one-to-one relation so that when said demand information is, according to the business contents, an order inflow from a request source, shipping instruction, ordering instruction, design instruction, inspection instruction, assembly instruction, delivery instruction, and purchase instruction, said supply information is, corresponding to the respective items of said demand information, delivery, shipping result, ordering result, design result, inspection result, assembly result, delivery result,

and purchasing result.

[Claim 6]

The information processing system according to Claim 4, wherein said attribute information includes information regarding specification and conditions in relation to said demand information and results information in relation to said supply information.

[Claim 7]

The information processing system according to any one of Claims 2 to 6, comprising:

a means for registering a business procedure defining the sequence of multiple sets of said demand information and supply information regarding said business process and a business flow defining the flow relation of a plurality of said business procedures in said storage unit as a business procedure master and a business flow master; and

a means for controlling execution of said business process in accordance with the procedures and procedure flow registered in said business procedure master and business flow master.

[Claim 8]

A business process execution management method using an information processing system comprising a storage unit and a data processing unit, including:

a step of registering information defining the processing contents and procedures of said business process in said storage unit in advance; and

a step of controlling execution of said business process with reference to the registered information in said storage unit, wherein change in said business process can be handled by changing information registered in said storage means.

[Claim 9]

The business process execution management method according to Claim 8, wherein:

information regarding said business process is divided into demand information regarding request/instruction from a request source and supply information regarding

execution and results report information of said demand, said demand information and supply information are expressed by a combination of 5W 1H element information consisting of the 5Ws, Who/Whom, When, Where, and What, and How, and a database for registering 5W1H format demand information and supply information is provided in said storage unit, and

the method includes a step of registering demand information consisting of 5W1H format element information that corresponds to a request from a request source in a demand table of said database so as to issue a request/instruction; and

a step of registering supply information consisting of 5W1H format element information that is an results report of said demand in a supply table of said database as a report that a business corresponding to said demand is executed and the business is completed.

[Claim 10]

The business process execution management method according to Claim 8 or 9, including:

a step of registering a business procedure defining the sequence of multiple sets of said demand information and supply information regarding said business process and a business flow defining the flow relation of a plurality of said business procedures in said storage unit as a business procedure master and a business flow master; and

a step of controlling execution of said business process in accordance with the procedures and procedure flow registered in said business procedure master and business flow master.

[Claim 11]

A method of establishing an information system comprising a storage unit and a data processing unit and executing a business process, wherein:

information defining said business process is divided into demand information that is request/instruction from a request source and supply information that is execution and results report information to said request source;

said demand information and supply information are expressed by a

combination of 5W1H format element information consisting of the 5Ws, Who/Whom, When, Where, and What, and How; a request/instruction is issued by registering said demand information consisting of 5W1H format element information that corresponds to the request/instruction in a 5W1H format database of said storage unit; and when a business corresponding to said demand is executed and the business is completed, reporting is conducted by registering said supply information consisting of 5W1H format element information that is an results report of said demand in a 5W1H format database of said storage unit.

[Claim 12]

The method of establishing an information system according to Claim 11, wherein attribute information is added to said 5W1H format element information and registered in said storage unit.

[Claim 13]

The method of establishing an information system according to Claim 11, wherein said demand information and supply information consisting of 5W1H format element information are associated in a one-to-one relation so that when said demand information is, according to the business contents, an order inflow from a request source, shipping instruction, ordering instruction, design instruction, inspection instruction, assembly instruction, delivery instruction, and purchase instruction, said supply information is, corresponding to the respective items of said demand information, delivery, shipping result, ordering result, design result, inspection result assembly result, delivery result, and purchasing result.

[Claim 14]

The method of establishing an information system according to Claim 12, wherein said attribute information includes information regarding specification and conditions in relation to said demand information and inspection information in relation to said supply information.

[Claim 15]

The method of establishing an information system according to Claim 11,

wherein:

a business procedure defining the sequence of multiple sets of said demand information and supply information regarding said business process and a business flow defining the flow relation of a plurality of said business procedures are each registered in said storage unit as a master table; and

said data processing unit executes said business process in accordance with the contents of the master tables of said business procedure and business flow.

[Claim 16]

The method of establishing an information system according to any one of Claims 11 to 15, wherein said data processing unit comprises an input/output interface, and the input/output interface is created as appropriate on an arbitrary basis according to the business form and can be updated, added, changed, or created by the end user of the system.

[Claim 17]

A recording medium on which programs are recorded, wherein in an information processing system comprising a storage unit and a data processing unit and executing a business process in which:

information defining said business process is divided into demand information regarding request/instruction from a request source and supply information regarding execution and results report information of said demand, and said demand information and supply information are expressed by a combination of 5W1H format element information consisting of the 5Ws, Who/Whom, When, Where, and What, and How,

said programs allow said data processing unit to execute:

the first processing for registering said demand information consisting of 5W1H format element information that corresponds to said request/instruction in a 5W1H format database of said storage unit upon issue of said request/instruction; and

the second processing for registering said supply information consisting of said 5W1H format element information that is a results report of said demand in a 5W1H format database of said storage unit as a report that a business corresponding to said

demand is executed and the business is completed.

[Claim 18]

The recording medium according to Claim 17, wherein said programs allow said data processing unit to conduct:

the third processing for registering a business procedure defining the sequence of multiple sets of said demand information and supply information regarding said business process and a business flow defining the flow relation of a plurality of said business procedures in said storage unit as a business procedure master and a business flow master; and

the fourth processing in which said data processing unit executes said business process in accordance with the procedure and flow registered in said business procedure master and business flow master.

[Detailed Explanation of the Invention]

[0001]

[Technical Field]

The present invention relates to an information processing system and particularly to a system and method and a recording medium for managing a business process.

[0002]

[Prior Art Technology]

Recently, under the influence of drastic changes in the business environments, it is accompanied by significant difficulties to quickly adjust information systems in accordance with frequent implementation of BPR (business process reengineering) and changes in business processes called “Kaizen (improvement)” that are made by small group activities on a daily basis at production sites.

[0003]

Particularly, for production systems of high-tech companies, changes in the business processes occur incessantly every day along with the shorter life cycle of commercial products and this trend seems to be augmented in the future. Under such

a circumstance, delay in adjustment of the information systems is an obstacle for improvement in the process.

[0004]

FIG. 10 is an illustration schematically showing a conventional prior art information processing system. Prior art application packages represented by ERP (enterprise resource planning) include in a function within the package or in a standard database of the package algorithm obtained by generalizing a business process that was successful in an ERP-installed company, which is called “a best practice,” so that it is usable at other companies.

[0005]

For example, an order inflow business process consists of an order receipt function (a) in the ERP package and a order receipt table (b) of a package standard database (DB).

[Problem to be Solved by the Invention]

[0006]

In the system configuration shown in FIG. 10, if the order receip business process is changed, it is required to change individual functions (modules) in the ERP package and the database table structure. Then, a problem is that if the business process is a new process and some addition or change has to be made to the table, the adjustment may not be made.

[0007]

Then, the present invention is invented in view of the above problem and an exemplary object of the present invention is to provide a system and method and a recording medium for eliminating the necessity of changing the module functions upon change in the process and allowing for quick adjustment.

[0008]

[Problem Resolution Means]

In order to achieve the above object, the present invention comprises a means for dividing information defining the business process into demand information that is

request/instruction from a request source and supply information that is execution and results report information of the demand, expressing the demand information and supply information using a combination of 5W1H format element information consisting of the 5Ws, Who/Whom, When, Where, and What, and How, and registering the 5W1H format element information in a 5W1H database of the storage unit. Furthermore, attribute information can be added to the 5W1H format element information and registered in the database.

[0009]

In the present invention, the demand information and corresponding supply information of the business process are paired. A business procedure defining the sequence of multiple sets of the demand information and supply information regarding the business process and a business flow defining the flow relation of a plurality of the business procedures are each registered in the storage unit as a master table. The data processing unit executes the business process in accordance with the contents of the master tables of the business procedure and business flow.

[0010]

[Mode for Implementing the Invention]

A mode for implementing the present invention will be described hereafter. The present invention provides a system allowing for agile change upon change in an changing business process of an information system executing business processes changed frequently in accordance with change in the business environment or so-called “Kaizen (improvement)” activities. The major characteristics of the present invention will be described below.

[0011]

- In a business process, information to be handled can be divided into two categories: request/instruction (requisition) and results report. The inventors of the invention of the present application focused on the fact that they can be paired and termed the former “demand” and the latter “supply”; these two terms are used to express basic information regarding a business process.

[0012]

- It was verified that “demand” and “supply” can be expressed by a common “5W1H” format consisting of the 5Ws, Who/Whom, When, Where, and What, and How and basic information is registered in a 5W1H format database.

[0013]

- The occurrence pattern of a pair of demand and supply is sequenced, a group of multiple patterns is set as a business procedure, the flows of business procedures are associated with each other to establish a business flow, whereby the information system can be controlled.

[0014]

- Various kinds of individual information processing required for an information system are executed based on definition information of the option processing master.

[0015]

With the present invention having the above characteristics being applied to an information processing system, quick adjustment to change in a business process can be made.

[0016]

In the present invention, definition parts of a business process or processing are registered in a database as tables as shown in FIG. 1 so that they are excluded from the process, whereby the business processes and databases of an information processing system are highly independent. Then, an information system in which the definition information in the tables is changed so as to make quick adjustment to frequent changes in the business processes can be established.

[0017]

Information databases created in accordance with the excluded process definition utilize an expression method using a common format consisting of “5W1H” as shown in FIG. 2, namely 5H, Who, Whom, When, Where, and What, and 4H, How-Many, How-Long, How-Much, and How-Do (which is also termed “5W4H”

explicit about 4H).

[0018]

A series of verification work conducted by our own company over past several years revealed that the above “5W1H” format data definition method can be used to express basic information of all business processes and the present invention is based on this finding. FIGS. 6 and 7 show a verification work.

[0019]

FIG. 6 is an illustration showing an old business form of a target plant, wherein a push-type production system is established around the planning section. Receiving an order from a customer (service section) 610, a planning section 620 expands parts configuration (BM) and gives instructions on material arrangement and production to a material section 640 and a manufacturing/inspection section 630. In FIG. 6, outlined arrows present demand information, hatched arrows present supply information, and solid line arrows present physical distribution.

[0020]

When things and information (demand information and supply information) flow as shown in FIG. 6, demand information and supply information can be expressed as follows:

- the origin of an arrow constitutes “Who”;
- the tip of the arrow constitutes “Whom”;
- a product or part on which instruction is given constitutes “What”;
- instruction itself such as arrangement, delivery-from-warehouse, assembly and inspection constitutes “How-Do.”

[0021]

On the other hand, FIG. 7 is an illustration showing a pull-type business form in which a lean manufacturing system is introduced, which is a business form completely opposite to the prior art shown in FIG. 6.

[0022]

In this case, a planning section (SBU) 710 gives instruction only to an incoming

inspection section 730 and the other process steps receive instruction from the subsequent process step in sequence. In other words, receiving an inspection instruction issued by the planning section 710, the inspection section 730 gives an assembly instruction to an assembly section 740, the assembly section 740 gives an instruction to an SMT (surface mounting/installation device) 750, and the SMT 750 issues an instruction to a purchasing section 720; the planning section (SBU) does not directly interact with the material section about arrangement and so on as shown in FIG. 6.

[0023]

It was verified that change in a business process can be handled simply by changing data of the origin of an arrow “Who” that is the creator of demand, or instruction contents “How-Do” such as purchase of materials in a 5W1H format database (11 in FIG. 1) without changing any definition or relation in the data table.

[0024]

According to an embodiment of the present invention, in an information processing system comprising a server unit (data processing unit) having a database (storage unit) and executing a business process, information defining a business process is divided into demand information regarding request/instruction from a request source and supply information regarding execution and results report information of the demand, the demand information and supply information are expressed by a combination of 5W1H format element information consisting of the 5Ws, Who/Whom, When, Where, and What, and How, and How, and the first processing for registering the demand information consisting of 5W1H format element information that corresponds to the request/instruction in a 5W1H format database upon issue of the request/instruction, and the second processing for registering the supply information consisting of 5W1H format element information that is a results report of the demand in a 5H1H type database as a report that a business regarding the demand is executed and the business is completed are realized by executing programs on the server unit. Furthermore, the third processing for registering a business procedure defining the

sequence of multiple sets of the demand information and supply information regarding the business process and a business flow defining the flow relation of a plurality of the business procedures in the storage unit as a business procedure master and a business flow master and the fourth processing in which the business process is executed in accordance with the procedure and flow registered in the business procedure master and business flow master are realized by executing programs on the server unit. In such a case, the programs can be read from a recording medium (a magnetic disc, magnetic tape, optical disc such as a CD-ROM, semiconductor memory, etc.) on which the programs are recorded to a server computer, loaded onto the main memory, and executed to implement the present invention.

[0025]

[Embodiments]

Embodiments of the present invention will be described with reference to the drawings for explaining the above-described mode for implementing the present invention in further detail. FIG. 1 is an illustration showing the system configuration of an embodiment of the present invention. As shown in FIG. 1, an embodiment of the present invention is composed of a group of databases called a U-RDB (unified relation database) 1, a common component group 2, and a group of business process and processing definition group 3 defining business processes and processing.

[0026]

The U-RDB 1 consists of a group of three databases: a demand/supply table 11 storing demand and supply information, a general property table 12 storing workflow properties, and an individual property table 13 storing properties regarding demand and supply information.

[0027]

The common component group 2 consist of a group of six different components: a database (DB) search engine 21, a configuration development engine 22, a stock simulation 23, an option processing group 24, a POT (portable terminal)/BLP (barcode label printer) processing group 25, and a DB recording/updating processing

26. The POT is a wireless terminal with a barcode reader that is used for warehousing/delivery-from-warehouse businesses in physical distribution. The POT processing group consists of a group of software processing elements for exchanging data and control with the wireless terminal. The BLP is a printer dedicated to barcode label printing. The BLP processing group consists of a group of software processing elements for exchanging data and control with the printer dedicated to barcode label printing.

[0028]

The business process and processing definition group 3 consists of definition masters such as a demand supply master 31, a business procedure master 32, a business flow master 33, and an option processing master 34. The option processing master 34 stores individual information necessary for the information processing system.

[0029]

For use in an actual business, a man-machine interface (graphical user interface) 4 (displaying various business screens) and an interface to in-house and outside systems such as PDM, CAD/CAM/CAT, M/C control and the like 5 are provided. Among them, the PDM (product data management) means product information management (product design information management). The PDM of the interface 5 is an interface with a product design information management system for product drawings/specifications. The CAD/CAM/CAT is an interface with a CAD (computer aided design) system / CAM (computer aided manufacturing) system / CAT (computer aided test) system. The M/C is an interface with automated machines in the plant.

[0030]

The above interface parts can be created easily and on an arbitrary basis in accordance with the individual business form using tools and languages the end user is familiar with such as MS-EXCEL (trademark) and MS-Access (trademark) with reference to the U-RDB 1. The U-RDB 1 is accessed by a SQL (structured query language) server via a transfer server described later.

[0031]

The above interface parts serve for screen definition or edition of file transfer contents, which is based on the common database U-RDB 1 and therefore relatively simple information processing; addition and change can be made as appropriate. This can easily be created also by the end user.

[0032]

Therefore, in an embodiment of the present invention, quick adjustment is not hindered by a bottleneck problem with interface configuration/change when a business process has to be changed due to BPR or business improvement. Conversely, the end user can directly handle each case. Inconvenient practice of the prior art in which a request is made to the IS (information system) section and backlogged and therefore the action is delayed is eliminated.

[0033]

Operation of this embodiment will be described hereafter with reference to the drawings.

[0034]

Basic information of an actual company business process can be broken down to two major categories, requests/instructions 11A and execution/results report 11B, as shown in FIG. 2.

[0035]

In the specification of the present application, the requests/instructions 11A is referred to as “demand” and the execution/results report 11B is referred to as “supply.”

[0036]

Further broken down, any demand and supply can be expressed by the following “5W4H” (see FIG. 2).

[0037]

More specifically, element information such as

5W: Who, Whom, When, Where, and What; and

4H: How-Many, How-Long, How-Much, and How-Do

is registered and managed in a “demand/supply” table of the U-RDB 1 and,

based on the registered information, execution of all business processes is controlled.

[0038]

In other words, information on the categories of demand/supply necessary for a business process is registered in the demand/supply master 31 (see FIG. 1). The sequence of occurrence of pairs of demand and supply is registered in the business procedure master 32. The flow of business procedures is registered in the business flow master 33 (see FIG. 1). The processing of the business process is controlled based on the registered information.

[0039]

FIG. 3 is an illustration schematically showing exemplary contents of the demand table in an embodiment of the present invention. Each category of demand is given information fields corresponding to Who, Whom, What (key, parent key, product code), How Many, When, and How Much. In the case of order inflow, the fields include client, order recipient, order received, client order number, product code, ordered quantity, delivery date, and sales price information. In the example shown in FIG. 3, the categories of demand include order inflow (ordering), shipping instruction, production instruction, inspection instruction, assembly instruction, purchase request, requirement registration, purchase ordering, acceptance inspection instruction, and delivery instruction. The example shown in FIG. 3 is given as exemplary categories of demand. Needless to say, the categories of demand of the present invention are not restricted to this composition.

[0040]

FIG. 4 is a schematic illustration showing execution of an actual business according to an embodiment of the present invention, presenting a part of a production system of a communication device manufacturing plant. Business execution in an embodiment of the present invention will be described with reference to FIG. 4. Here, it is assumed that the categories of demand/supply regarding the business process and information regarding their occurrence sequence are registered in the demand/supply master 3, business procedure master 32, and business flow master 33 in advance.

[0041]

In FIG. 4, a 5W1H format master file database (demand/supply) 11 constitutes the system of an embodiment of the present invention. Explanation will be made hereafter in regard to a business case at the planning and related sections.

[0042]

A production coordinator of the planning section A1 issues an assembly instruction 11A4 directed to the manufacturing section A2 and a purchase requisition 11A1 for making an arrangement of necessary materials to a 5W1H-format demand table 11A based on the plan. In doing so, Who is set to "the planning section A1" and Whom is set to "the manufacturing section A2" and "the purchasing section A3," respectively.

[0043]

Each section makes reference to the demand directed to its own section and executes the business. After completing the business, they register "results" corresponding to the demand in a 5W1H format supply table 11B of the database 11 for reporting.

[0044]

In this case, the purchasing section A3 having received the purchase requisition demand 11A1 further issues a purchase ordering demand 11A2 to a outside company A4 for placing an order.

[0045]

After the outside company A4 completes the delivery, a supply results 11B2 is posted as supply and, at the same time, supply to the purchase requisition 11A1 is posted in the supply table 11B as a purchasing results 11B1.

[0046]

Finally, receiving the results, the planning section A1 issues a stocking instruction demand 11A3 to the distribution section A5. The business is executed according to the above flow.

[0047]

How demand/supply relates to the business procedure master 32 and business flow master 33 that are components of the business process definition will be described hereafter with reference to FIG. 5.

[0048]

FIG. 5 is an illustration showing registration of the business process case shown in FIG. 4 in the business procedure master 32 and business flow master 33. The procedures of demand (the purchase requisition 11A1 and assembly instruction 11A4) issued by the planning section A1 are presented by the numbers 500 and 400, respectively.

[0049]

The procedure 500 defines a procedure in which a purchase requisition demand 500-1 is issued; after a purchasing results supply 500-2 that is supply to it is posted, a stocking instruction demand 500-3 is issued; after the warehousing is completed, a stocking results supply 500-4 is posted.

[0050]

The definition information of the procedure 500 is registered in the business procedure master 32 as a master. The business procedure master consists of a group of multiple sets of demand/supply in the sequence of procedures.

[0051]

Here, the procedure of purchase by the purchasing section A3 receiving a purchase requisition demand 500-1 consists of a procedure of purchase without inspection 600 or a procedure of purchase with inspection 601; either procedure is selected.

[0052]

After the selected procedure of purchase without inspection 600 or purchase with inspection 601 is completed, the flow returns to the procedure 500. In this case, the definition of the relation of the procedures 500 → 600 or 500 → 601 is referred to as a business flow master and registered in the business flow master 33.

[0053]

In an embodiment of the present invention, for all business processes executed in an information processing system, business procedures consisting of sets of demand and supply are registered in the business procedure master 32 and the business procedure flow is registered in the business flow master 33.

[0054]

The server environment used in an embodiment of the present invention will be described hereafter with reference to FIG. 8.

[0055]

Various kinds of demand/supply and property information are entered and searched for through a terminal H2 installed at workplaces. Such processing is performed by sending a processing parameter H2-1 and data H2-2 to a server H1 (which functions as a mediation server sorting out operations from terminals and called a “transfer server”).

[0056]

The transfer server H1 receives a processing parameter H2-1 sent from a terminal H2 and selects a core server for the processing parameter H2-1 or another server to execute the operation.

[0057]

For example, when a demand registration processing is requested, the transfer server H1 selects a main server H3, instructs it to execute a DB recording/updating component 26 (see FIG. 1), and registers the demand in the demand/supply table 11 (see FIG. 1).

[0058]

Furthermore, when a request for searching assembly instruction information and assembly drawings is received, the transfer server H1 instructs the main server H3 to execute a DB search engine 21 and selects a main server H5 where drawings/specifications are stored, retrieves necessary information, and provides it to the terminal H2.

[0059]

The transfer server H1 also has a function of managing and executing connection to other systems.

[0060]

In this case, a work instruction and installation specification/results collection to a surface mounting/installation device (SMT) H7 and information transfer to an external system H6 are conducted.

[0061]

The above connection/transfer information is created as a kind of individual property (attribute information) of demand/supply and registered in the individual property table 13.

[0062]

FIG. 9 schematically shows exemplary demand properties, supply properties, and workflow properties. Referring to FIG. 9, in addition to 5W1H format element information, attribute information complementing it is defined as properties (demand properties such as item specifications, purchasing condition, top sheet, drawings/manufacturing specifications, factory specification NC data, test specifications, and shipping specifications, and supply properties such as inspection results, problems/quality, stocking and delivery log, stock/validity, direct/indirect labor costs, and test data), whereby any business process can be expressed. The demand properties and supply properties shown in FIG. 9 are registered in the individual property table 13 (see FIG. 1) and the workflow properties are registered in the general property table 12 (see FIG. 1).

[0063]

In an embodiment of the present invention, it is possible to define demand/supply (5W1H format) and properties for interfaces for connection to other in-house systems and interfacing to systems of other companies and register them in tables for controlling based on the registered information. For example, it is possible to divide a business process requested to an internal system from an another company's system into demand and supply information and manage it using a database in the

5W1H format, whereby the business process can be controlled in the same manner as the above embodiment.

[0064]

A possible bottleneck information system can quickly be established and run upon implementation of BPR by providing a function to register three categories of information, instruction/request information (demand), report/execution information (supply), and attribute information (property), on a storage medium (5W1H format database) such as a magnetic disc and update it as appropriate.

[0065]

Application of the present invention facilitates integration with external systems connected via transfer servers and is effective for implementation of SCM (supply chain management). Application of the present invention to other companies such as business partners allows the databases of the same format to be shared, whereby virtual business cooperation becomes available.

[0066]

A transfer server H1 is used as a mediation function between the core servers and terminal H2. The present invention is applicable in the environment where the terminal H2 and core servers are directly connected. The present invention may be realized in such an environment for small businesses.

[0067]

[Effect of the Invention]

As described above, the present invention has the effect that quick adjustment to changes in business processes can be made.

[0068]

The reason is that in the present invention, a business process is broken down to business procedures and a business flow and they are managed in master tables as a combination of demand, supply, and property element information.

[0069]

In the prior art ERP or core business package, the business algorithm is

described using a procedural language. Therefore, when a business process flow or procedure is changed, it is required to examine related software modules and change them with extreme care in consideration of influence between modules. On the other hand, the present invention requires change only in the master tables when a business process is changed.

[0070]

The present invention has the effect that the end user can search for information using a standard search means and directly use it for business improvement (quality, cost, speed) of the end user since the basic information is stored in a 5W1H format database. The present invention dramatically improves the accuracy and speed compared with the prior art system in which a request is made to the system section and search is conducted via the third party.

[0071]

Furthermore, in the present invention, the end user can directly change the business process. There is no need of making a request to the IS (information system) section exclusively managing the information system each time. Consequently, the present invention has the effect that significant cutback in manpower is possible.

[Brief Description of the Drawings]

[FIG. 1]

An illustration showing the system configuration of an embodiment of the present invention.

[FIG. 2]

A schematic illustration for explaining the relation of demand, supply, and 5W1H in an embodiment of the present invention.

[FIG. 3]

An illustration schematically showing exemplary contents of the demand table in an embodiment of the present invention.

[FIG. 4]

An illustration schematically showing the operation of an embodiment of the

present invention.

[FIG. 5]

An illustration schematically showing business procedures and a business flow in an embodiment of the present invention.

[FIG. 6]

An illustration schematically showing a flow of demand/supply in an embodiment of the present invention.

[FIG. 7]

An illustration schematically showing a flow of demand/supply in an embodiment of the present invention.

[FIG. 8]

An illustration showing the server configuration in an embodiment of the present invention.

[FIG. 9]

An illustration showing an exemplary basic database structure in an embodiment of the present invention.

[FIG. 10]

An illustration schematically showing a prior art information system (ERP).

[Legend]

1 U-RDB

2 common component group

3 business process and processing definition group

4 man-machine interface (GUI)

5 other in-house and external systems interface

11 demand/supply table (5W1H format)

11A requests/instructions table

11B execution/results report table

12 general properties

13 individual properties

21 DB search engine
22 configuration development engine
23 stock simulation
24 option processing group
25 POT component BLP component
26 DB recording/updating component
31 demand/supply master
32 business procedure master
33 business flow master
34 option processing master
500, 600 procedure
500-1 purchase requisition demand
500-2 purchasing results supply
500-3 stocking instruction demand
500-2 stocking results supply
610, 700 customer
620, 710 planning section
630, 730 incoming inspection
631, 740 assembly
632, 750 SMT
633 board warehouse
641 stocked material
642, 760 warehouse
640, 720 purchasing section
650 acceptation inspection
660, 770 reception counter
670, 780 materials vendor
680, 790 outside company
H1 transfer server

H2 terminal

H2-1 processing parameter

H2-2 data

H3 to H5 main server

H6, ED1 external system

[Name of the Document] Abstract

[Abstract]

[Object]

To provide an agile information system eliminating the necessity of changing module functions upon change in a process and allowing for quick adjustment and a method of establishing it.

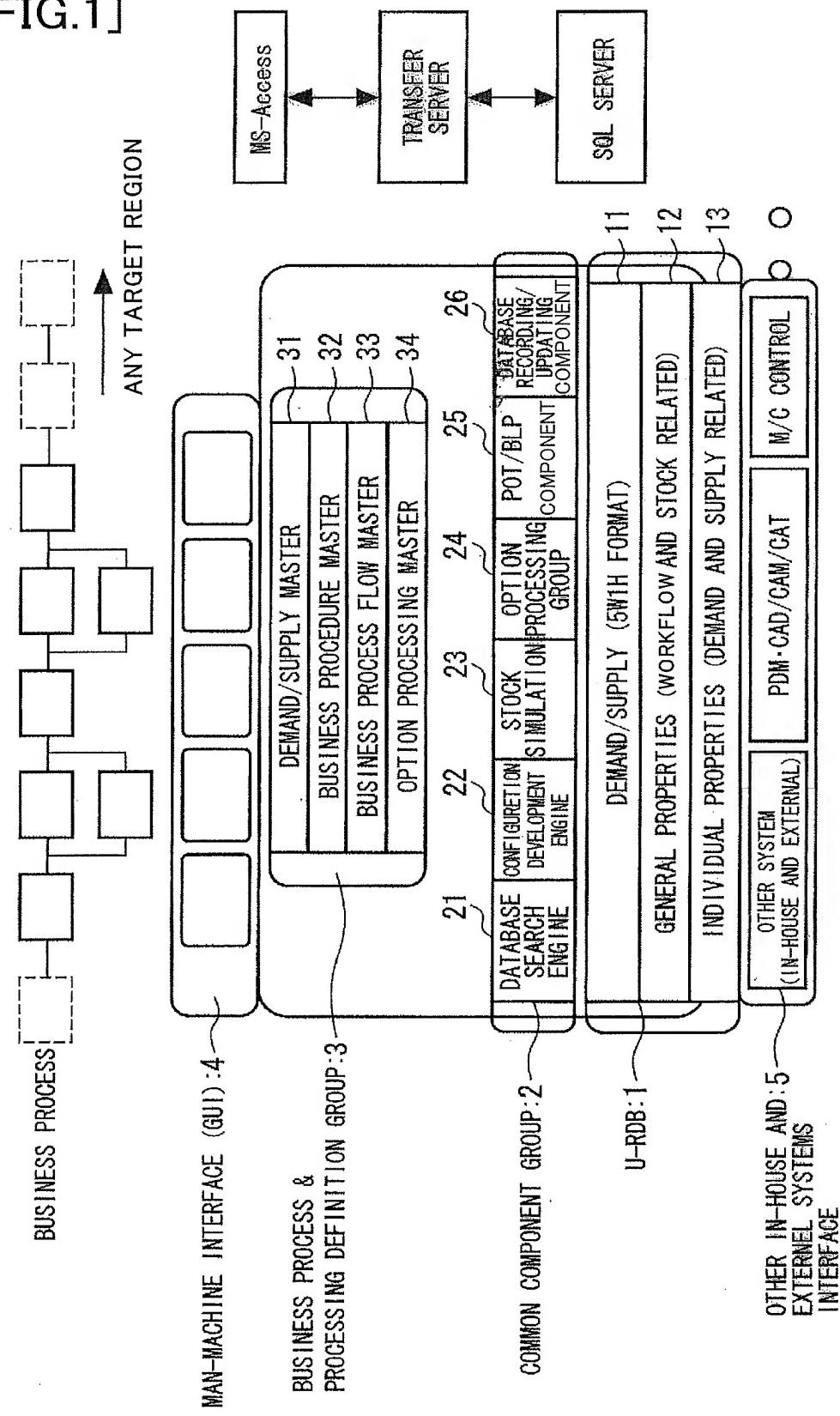
[Solution Means]

Information defining a business process is divided into demand information that is request/instruction from a request source and supply information that is execution and results report information to the request source, the demand information and supply information are expressed by a combination of 5W1H format element information consisting of the 5Ws, Who/Whom, When, Where, and What, and How, and the 5W1H format element information is registered in a 5W1H format database in the storage unit for controlling execution of the business process.

[Selected Drawing] FIG. 1

[Name of The Document] DRAWINGS

[FIG.1]



11A : REQUEST / INSTRUCTION

DEMAND	
ORDER INFLOW	
SHIPPING INSTRUCTION	
ORDERING INSTRUCTION	
DESIGN INSTRUCTION	
STOCKING INSTRUCTION	
INSPECTION INSTRUCTION	
ASSEMBLY INSTRUCTION	
DELIVERY INSTRUCTION	
PURCHASE INSTRUCTION	

CHANGES WITH MODIFICATION
OF THE PROCESS

5W1H FORMAT

WHO	
WHOM	
WHEN	
WHERE	
WHAT	
HOW MANY	
HOW LONG	
HOW MUCH	
HOW TO DO	

ATTRIBUTES (AUGMENTATIVE INFORMATION)

ORDER RECEIPT SPECIFICATIONS, DRAWINGS, MANAGEMENT REGION,
INSPECTION RESULTS, QUALITY INFORMATION, SCHEDULING INFORMATION,
etc.

11B : EXECUTION/RESULTS
REPORT

SUPPLY	
DELIVERY	
SHIPPING RESULTS	
ORDERING RESULTS	
DESIGN RESULTS	
STOCKING RESULTS	
INSPECTION RESULTS	
ASSEMBLY RESULTS	
DELIVERY RESULTS	
PURCHASING RESULTS	

SYSTEM
PKG
BAY
PARTS

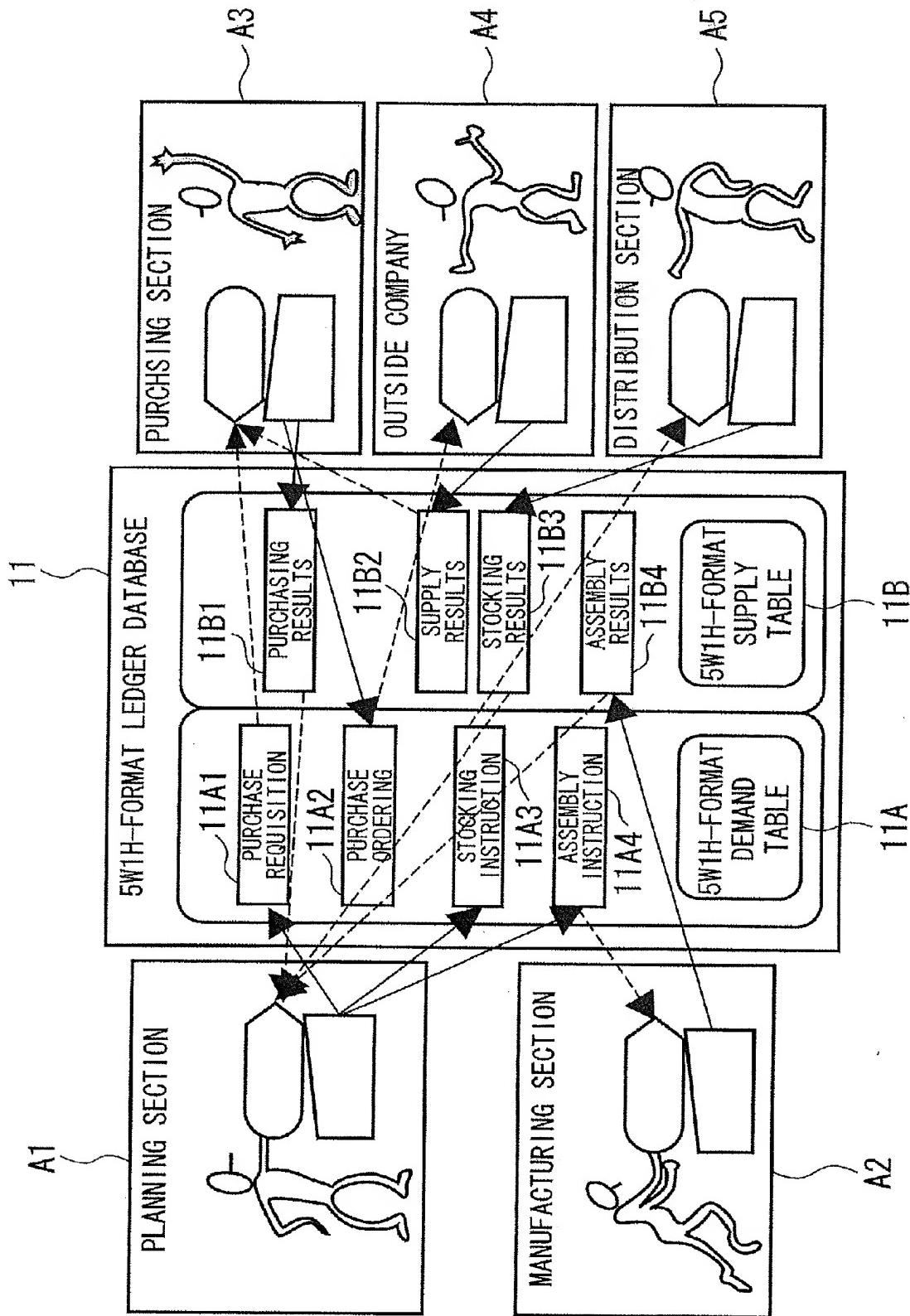
EXECUTION

[FIG.3]

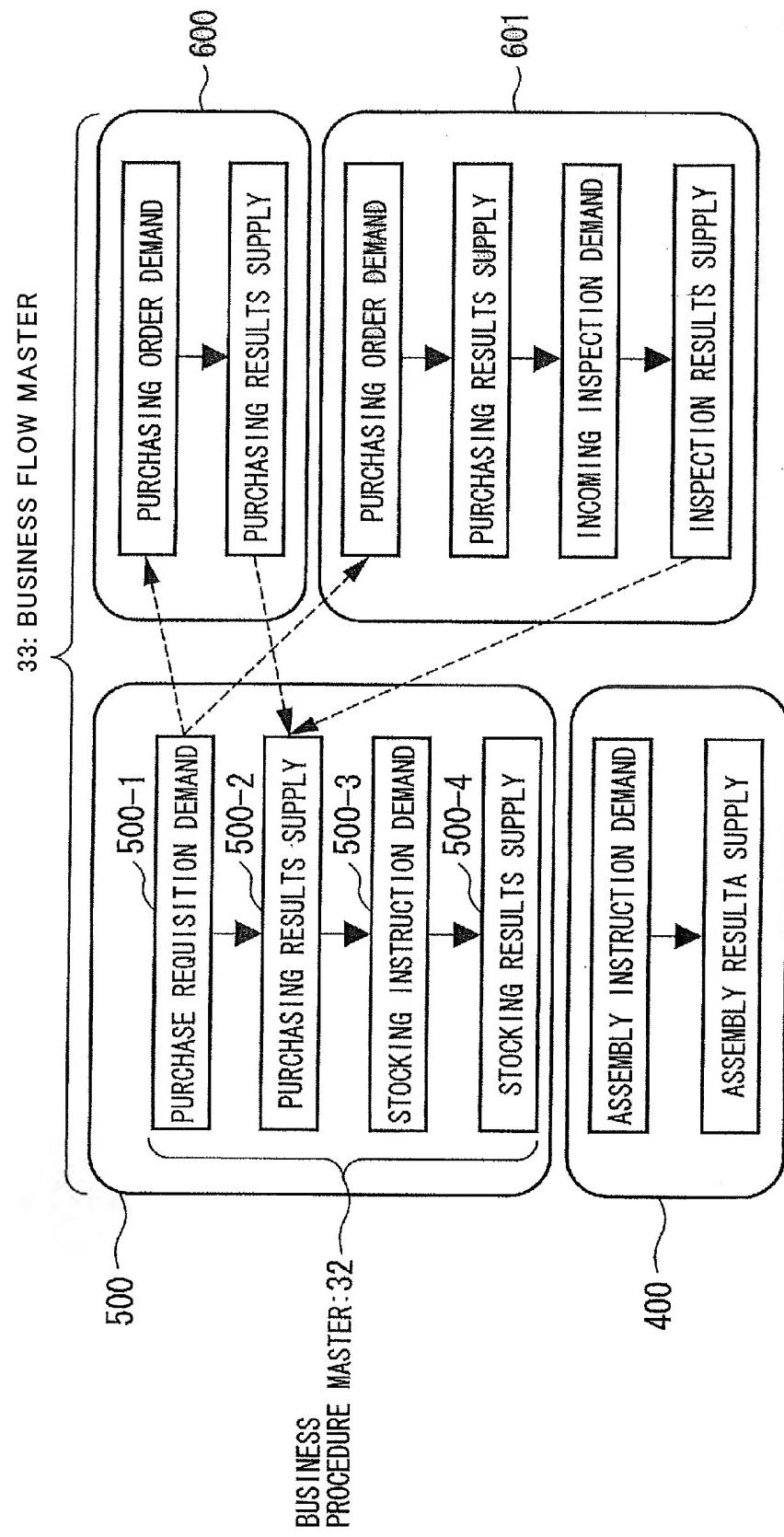
				WHAT					
DEMAND	WHO	TO WHOM	KEY	PARENT KEY	PRODUCT CODE	HOW MANY	BY WHEN	HOW MUCH	
ORDER RECEIPT (ORDERING)	CLIENT	ORDER RECIPIENT	RECEIVED ORDER	CLIENT ORDER NUMBER	PRODUCT CODE	ORDERED QUANTITY	TIME LIMIT OF DELIVERY	SALES PRICE	
SHIPPING INSTRUCTION	ORDER RECIPIENT	PLAN	SHIPPING ORDER	RECEIVED ORDER	PRODUCT CODE	SHIPPING QUANTITY	SHIPPING DATE	SHIPPING COST	
PRODUCTION INSTRUCTION	PLAN	PLAN	PROCEDURE NUMBER	SHIPPING ORDER	PRODUCT CODE	QUANTITY PRODUCED	IN-HOUSE INSPECTION COMPLETION DATE	MANUFACTURING COST	
INSPECTION INSTRUCTION	PLAN	INSPECTION	PROCEDURE NUMBER	PRODUCTION STEP NUMBER	PRODUCT CODE	QUANTITY PRODUCED	SCHEDULED INSPECTION COMPLETION DATE	DIRECT/INDIRECT INSPECTION COSTS	
ASSEMBLY INSTRUCTION	PLAN	MANUFACTURING	PROCEDURE NUMBER	INSPECTION STEP NUMBER	PRODUCT CODE	QUANTITY PRODUCED	SCHEDULED ASSEMBLY COMPLETION DATE	DIRECT/INDIRECT ASSEMBLY COSTS	
PURCHASE REQUISITION	PLAN	PARTS NAME	PROCEDURE NUMBER	ASSEMBLY STEP NUMBER	PRODUCT CODE	QUANTITY REQUIRED	DATE REQUIRED	PURCHASE PRICE	
REQUIRED REGISTRATION	PLAN	STOCK MATERIALS	PROCEDURE NUMBER	ASSEMBLY STEP NUMBER	PRODUCT CODE	QUANTITY REQUIRED	DATE REQUIRED	MATERIALS COST	
PURCHASE ORDERING	MATERIALS	VENDOR	PROCEDURE NUMBER	PURCHASING REQUEST STEP NUMBER	PRODUCT CODE	QUANTITY ORDERED	SPECIFIED DELIVERY DATE	ORDERED PRICE	
INCOMING INSPECTION INSTRUCTION	MATERIALS	INSPECTION	PROCEDURE NUMBER	PURCHASING ORDERING STEP NUMBER	PRODUCT CODE	QUANTITY INSPECTED	SCHEDULED ACCEPTANCE DATE	DIRECT/INDIRECT INSPECTION COSTS	
DELIVERY INSTRUCTION	STOCK MATERIALS	DISTRIBUTION	STOCK NUMBER	REQUIRED REGISTRATION STEP NUMBER	PRODUCT CODE	QUANTITY DELIVERED	SCHEDULED DELIVERY DATE TRANSFER PRICE	SHIPPING PRICE	

NAME FOR EACH DEMAND

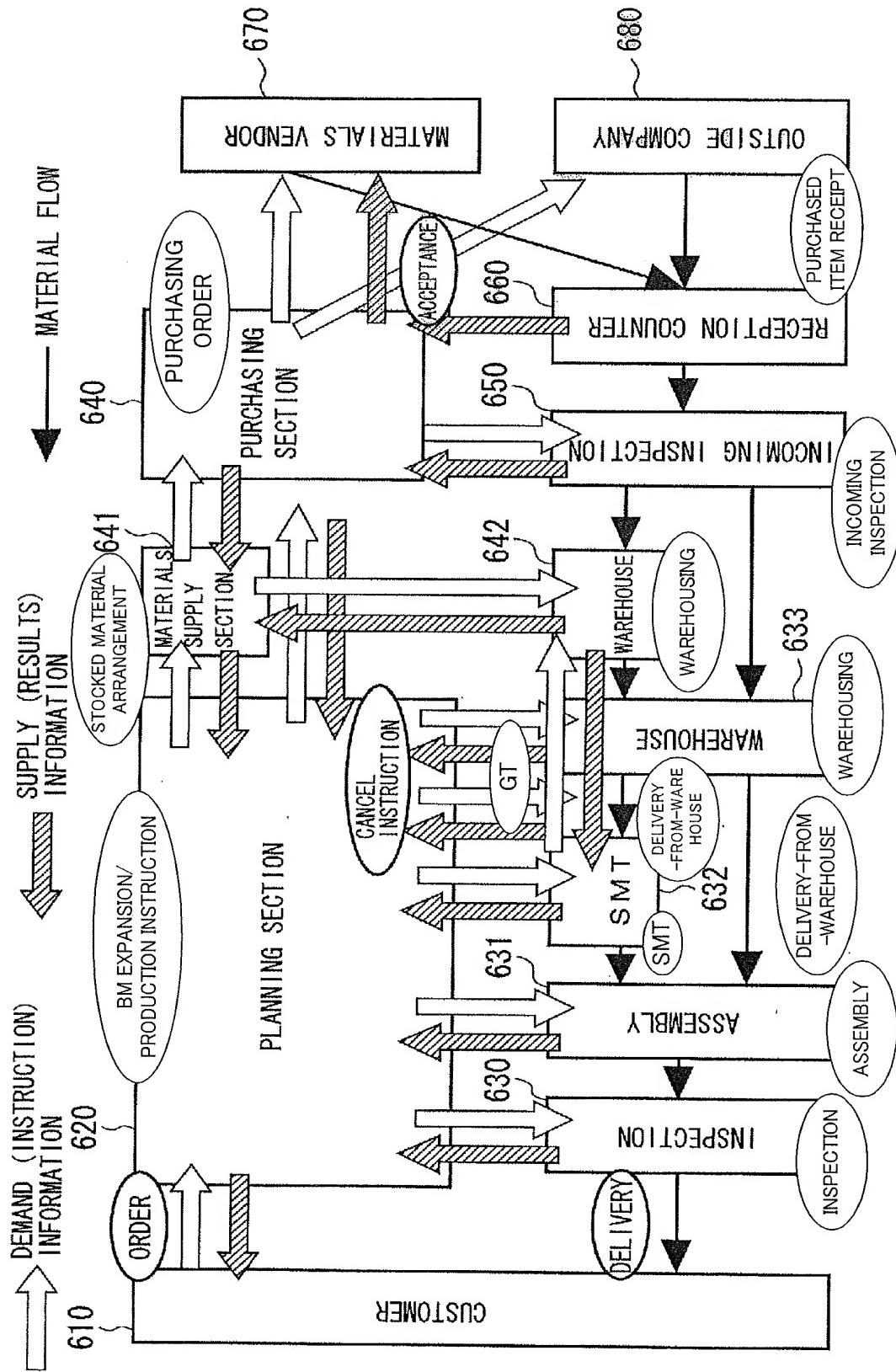
[FIG.4]



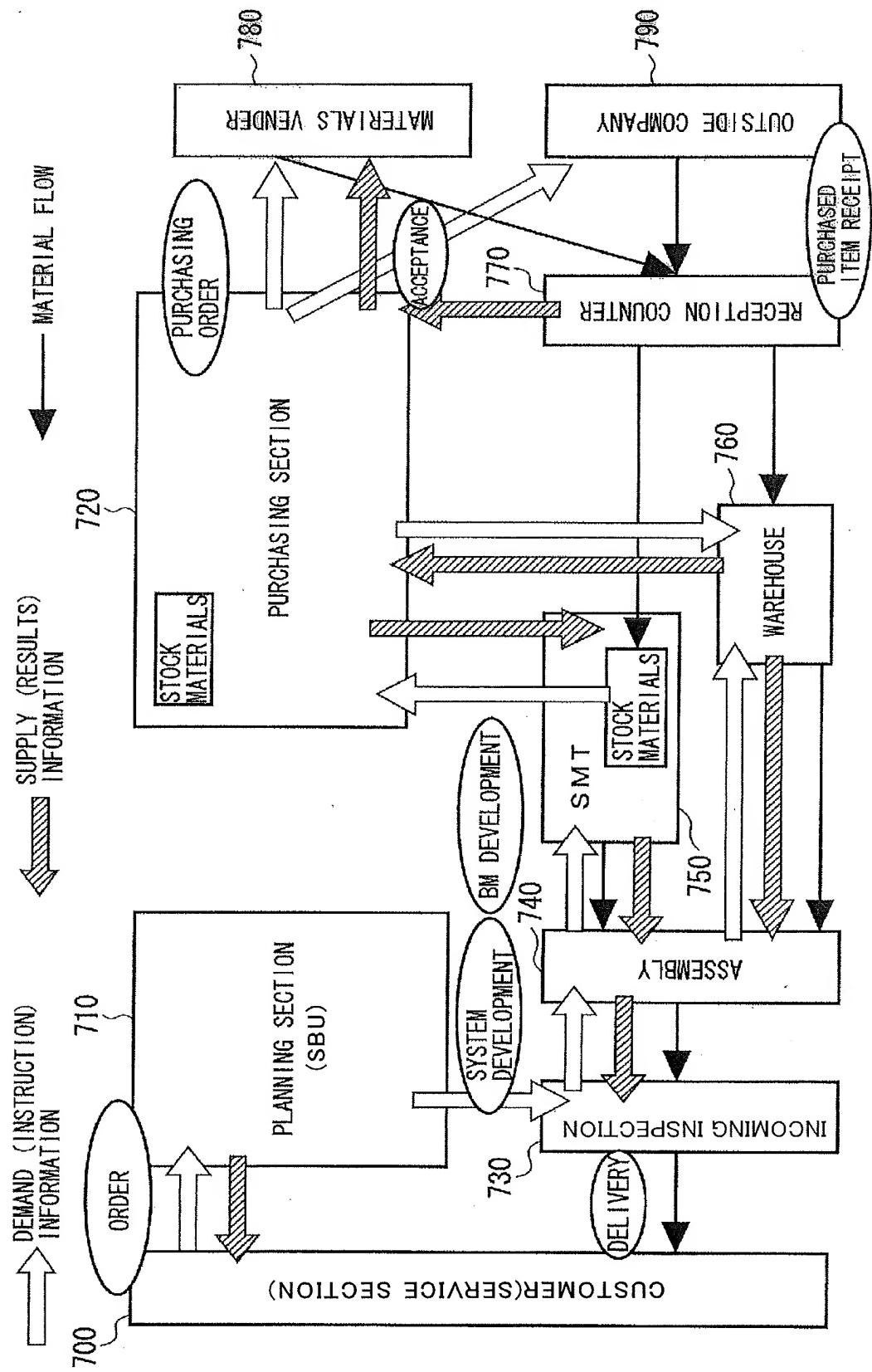
[FIG.5]



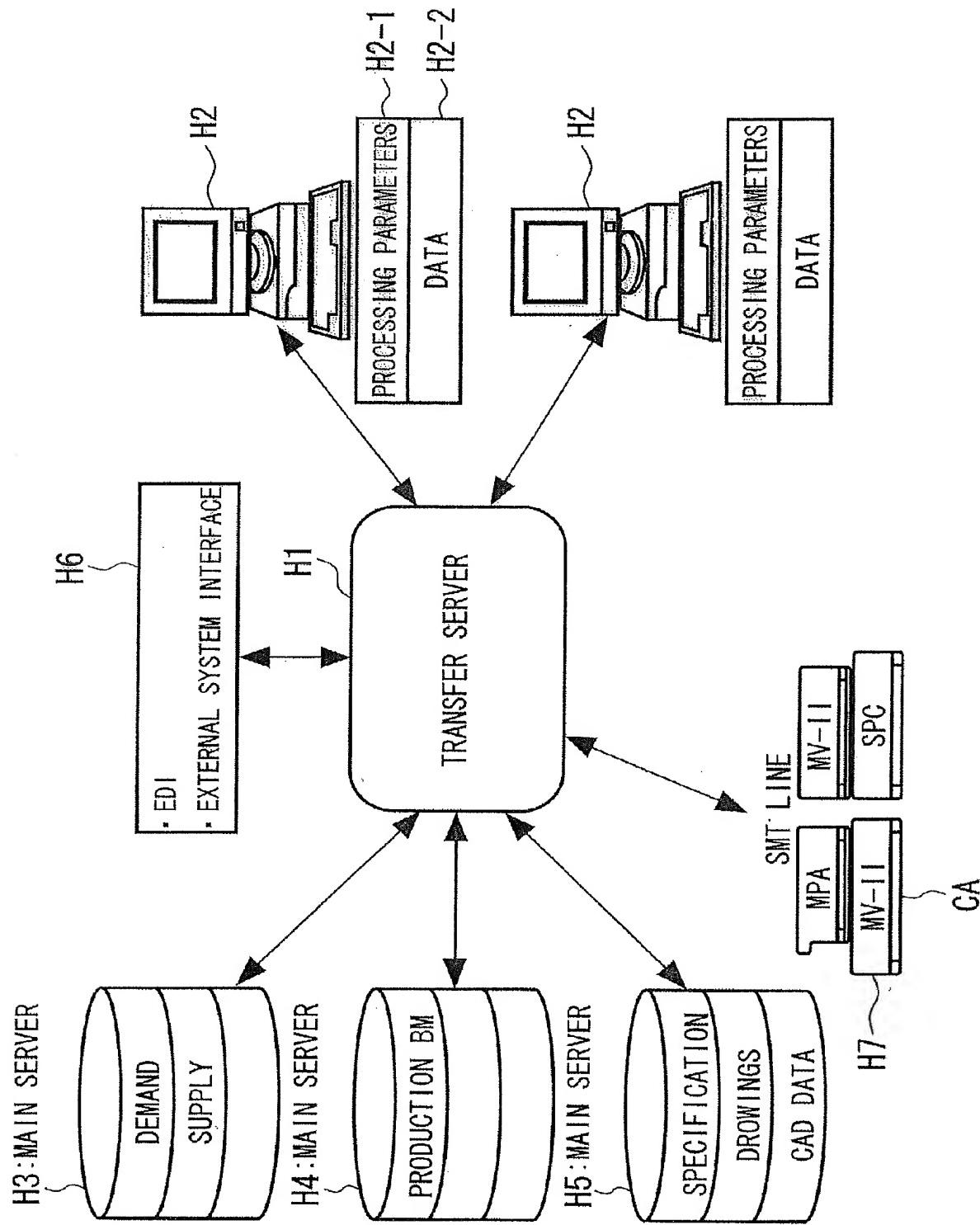
[FIG.6]



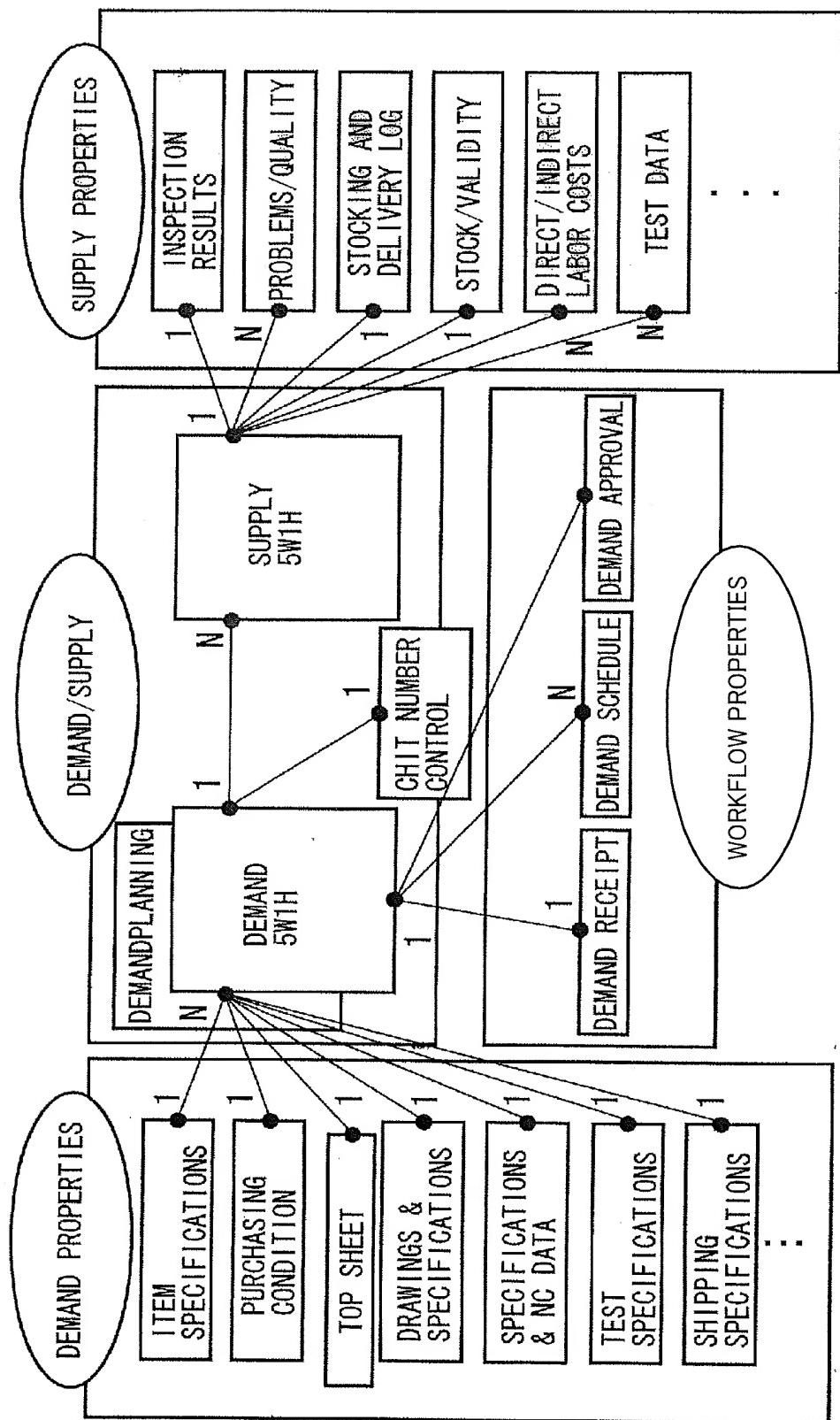
[FIG.7]



[FIG.8]



[FIG.9]



[FIG.10]

